

Remarks:

In response to the Office Action dated 5/5/05, the drawings were objected to for use of the characters 5 in Fig. 3. Reconsideration of the objection to the drawings is respectfully requested. The terminology 5-5 was used to indicate a section taken through 5-5 of Fig. 3 for Fig. 5. This terminology appears in the specification in page 4. See the description of Fig. 5 as a section through 5-5 of Fig. 3. It is submitted that the numeral 5 was sufficiently referred to in the specification.

The Examiner's indication that claims 22 through 25 are allowable is gratefully acknowledged. Claim 22 has been rewritten in independent form and revised it slightly to enhance its clarity and to set forth that the hollow tube is for cooling water. An indication of allowability of the written claims 22 through 25 is earnestly solicited.

The Examiner also objected to the numbering of the claims because claim 7 was missing. It is respectfully acknowledged that claims 8 through 28 have been renumbered as 7 through 27 by the Examiner.

In the Office Action, claims 1-10, 14, 21 and 26 were rejected under 35 U.S.C. § 102(b) as anticipated by US Patent No. 5,271,031 (Baer) and claims 11 through 13 and 15 through 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Baer in view of US Patent No. 6,676,402 (Early). Claims 17 through 20 were rejected as obvious under 35 U.S.C. § 103 over Baer in view of Zhang US Patent No. 6,873,639. Claims 27 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Baer in view of Tsunekane US Patent No. 6,822,985.

As set forth in claim 1, the invention relates to a side pump laser which includes a cavity formed between a first and second reflective surface. The cavity has an optical axis and one or more laser rods located within the cavity along the optical axis. A plurality of diode bars are provided having radiation outlets in optical communication with each laser rod for supplying

electromagnetic radiation to the rod. The electromagnetic radiation propagates through the lasing rod on a plurality of substantially non-intersecting paths. These paths traverse the laser rods substantially perpendicular to the direction of propagation of energy in the laser cavity. In claim 9 according to Applicant's invention, the diode bars are oriented symmetrically around the periphery of the lasing rod.

Reconsideration of the rejection is respectfully requested. Applicant provides a high energy side pumped laser which can be pumped at high power without damaging the laser crystal. The Baer '031 patent does not show or suggest Applicant's invention. The Baer '031 employs longitudinal pumping and as a result needs mode matching. In Fig. 1 of Baer the direction of propagation of the laser beam through the laser medium is represented by the zigzag path 18 through the rod. See all the Figs. As stated in Baer in column 3, line 25, the divergence of the laser diode emission, often a two lobe pattern, is matched to the full angle of the zigzag path of the TEM₀₀ beam through the block of the laser material. In other words, the energy propagating from the diode travels substantially along the path of energy propagation of the beam through the lasing medium. On the other hand, element f of claim 1 requires that the electromagnetic radiation propagates through the lasing rod on a plurality of substantially non-intersecting paths and the paths traverse the laser rods substantially perpendicular to the direction of propagation of energy in the laser cavity. This is in sharp contrast to Baer which requires that the energy supplied by the diode bars transverse the lasing rod in the same direction as the propagation of energy in the laser cavity. Thus, Baer neither discloses nor renders obvious Applicant's invention. Claim 9 is also not disclosed by rendered obvious by Baer either alone or in combination with the art of record. In the Office Action regarding claim 9, reference is made to Fig. 2, character 24 for orientation of the diodes around the periphery of the lasing rod. However, there is no suggestion in Baer that the bars be oriented as required by element e to propagate through the lasing rod on a plurality of substantially non-intersecting

paths. In Fig. 2 of Baer, one can see there is substantial overlap of the energy propagating from the opposed diodes. The energy propagating from the diode bars would be on an expanding path. There would be substantial overlap due to this expansion from the configuration shown in Fig. 2. Moreover, at each of the outlets of diode bars 26, there would be an overlap with the energy from the opposed diode bars as the energy from the bars 26 substantially propagates along the zigzag path. Thus, there would be substantial overlap through the configuration shown on Fig. 2. Thus, claim 9 is not shown or suggested by the art of record.

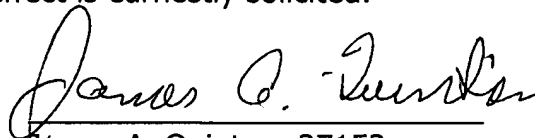
Regarding the rejection of claims 15 to 16 as rendered obvious over Baer in view of Early '402, Zhang '639 or Tsunekane. Reconsideration is requested. Early was cited to show YLF crystals, Zhang to show side pumped harmonic lasers and Tsunekane to show dual rods in a cavity. Nothing in those references shows or suggests Applicant's invention either alone or in combination with Baer for the reason set forth above.

As to the remaining claims, since these claims are dependant on allowable claim 1 for the same reasons set forth as to claim 1, these claims are not shown or suggested by Baer either alone or in combination with any of the art of record.

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It is respectfully submitted that the application is in condition for allowance and an early notice to that effect is earnestly solicited.

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Patent: High Powered Diode . . . Serial No.: 10/603,264

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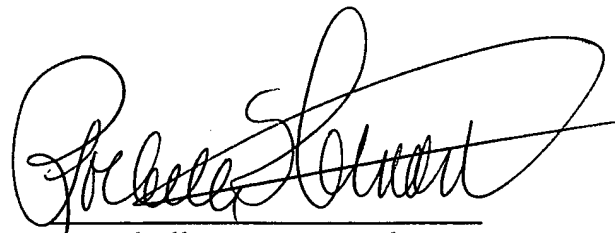
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Enclosed:

1. Amendment
2. Postcard
3. Revised claim list.

Dated: August 3, 2005



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